PHILADELPHIA NEUROLOGICAL SOCIETY.

February 27, 1899.

Vice-President, Dr. John K. Mitchell, in the chair.

A CASE OF ATAXIA FOR NOSOLOGICAL DIAGNOSIS.

PROBABLY PROGRESSIVE MENINGO-MYELITIS (CEREBRO-SPINAL).

Dr. F. Savary Pearce presented a case of ataxia for diagnosis. A sister of the patient became deaf in her eighth year, apparently from central cause. The father was alcoholic. The family history otherwise was negative.

The patient, a man of 22 years, began to be deaf at the age of eight, like the sister, from unknown cause. This deafness became almost absolute in a few years, and has remained so. No history of venereal infection was obtained. The present trouble began more than three years before he was first seen by Dr. Pearce, on May 1st, 1898. In 1895 he first complained of rather sudden failure of vision, vertigo, tinnitus aurium, frontal headache and gastric indigestion. In November of that year the pupils were 2 mm. in diameter, and irresponsive to light and in accommodation. Retinal detachment, with swelling of the optic disk, was also found in the right eye, and vision was reduced to light perception. The optic disk was also swollen in the left eye, and vision was $\frac{5}{15}$ (?). The field was slightly contracted for form and colors. The treatment consisted of Donovan's solution, potassium iodide and special movements. In November of 1898 the pupils were pin-point in size and fixed; marked rotary nystagmus existed in both eyes; the deafness was constant; tinnitus aurium and muscæ volitantes were complained of; the vision was $\frac{5}{18}$ (?) in O. S.; the gait was very ataxic, as it had been for over two years, and the patient swayed much when standing erect, even with the eyes open. He complained of formication in all the extremities. Sensation throughout the body was markedly obtunded, and a small saddle-shaped area of hypesthesia existed in the perineum, but no anesthesia was found anywhere. A trophic ulcer was on the left buttock. The wasting of the muscles was general. No tenderness over the nerve trunks existed. Incontinence of urine was noted at times, and the bowels were costive. The knee-jerks were absent at first, and in February of 1899 could be obtained by reinforcement, but were soon exhausted. Both optic nerves were in a condition of advanced atrophy.

Dr. Charles K. Mills thought that the possibility of the case being a form of cerebro-spinal syphilis had not been ruled out. He also suggested the possibility of it being a case of gliosis, affecting both the cord and the basal region of the brain, in the peculiar manner in which this process does sometimes attack these regions. He thought that a cerebellar lesion would not explain the whole case.

Dr. Francis X. Dercum said that some of the symptoms certainly suggested cerebellar lesion; e. g., the ataxia, the titubation, the nystagmus, the variability of some of the symptoms; as did also the fact that the knee-jerk was elicited with difficulty at one time and more readily at another time. He asked whether it were not possible that we had here syphilitic disease of the cerebellum and also of other portions of the nervous system, whether it might not be hereditary syphilis. Hereditary syphilis not very rarely produces symptoms of organic nervous disease in the adult. The case suggested not only diffuse nervous syphilis, but also gumma of the cerebellum. Gumma in hereditary syphilis is rare, but cases have been reported. The fact that improvement followed the use of Donovan's solution and the iodides also indicated specific disease.

UNILATERAL ARGYLL-ROBERTSON PUPIL.

Dr. Wendell Reber said that in 1894, in an article on unilateral reflex iridoplegia, or unilateral Argyll-Robertson pupil, Haddaeus[1] (of Essen, Germany) made the statement that up to that time there had been reported to his knowledge but five instances of uncomplicated unilateral Argyll-Robertson phenomenon. This statement, along with that of Mr. Bevan Lewis, who found the anomaly but 11 times in 147 general paretics; Dr. Berger, who found it 3 times in 109 tabetics, and Dr. Gowers, who found it once in 72 tabetics, would indicate sufficient rarity to justify the report of the two following cases, for the observation of which he was indebted to the courtesy of Dr. William Campbell Posey:

Case I. R. W. P., male, married, *æt.* 60, an inmate of the State Hospital for the Insane at Norristown, Pa., was admitted to that institution August 29, 1898, in a condition of chronic dementia. Physical condition good. Family history not obtainable. Urinalysis: sp. gr. 1032, reaction acid, no albumin or sugar, centrifugalized sediment showed only occasional urates and bladder epithelium.. The patient's gait and station were fair, but there was abolition of the knee-jerks. Symptoms in the visual sphere. Tremor of the eyelids when the eyes were gently closed. Vision equaled 5-10 in both eyes, and with + 4.00 spherical the 0.50 D type was read from 30 to 40 cm. The ophthalmoscope showed in the right eye a disk of fair tint, oval in its vertical diameter, bounded all round by a visible scleral ring and skirted to the outer side by a well marked choroidal crescent. The vascularity of the fundus was good, likewise the condition of the outlying choroid and retina. The conditions in the background of the left eye were practically the same as those of its fellow. The pupillary status was as follows:

R. E. pupil 3½ × 4½ mm.; long axis 90°. Did not react to direct or consensual light stimulus, but reacted fully 2½ mm. to convergence stimulus.

L. E. pupil 4 × 5 mm.; long axis 90°. Responded 1 mm. to direct and ½ mm. to consensual light stimulus, and fully 2½ mm. to convergence stimulus. Therefore, while this eye, strictly speaking, could not be said to exhibit the Argyll-Robertson phenomenon, yet the paresis of the iris on this side portended early loss of all response to light stimulus.

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[1] Knapp's Archives, Vol. XXIII.

CASE II. G. M. W., *æt.* 29, single, also an inmate of the State Hospital for the Insane at Norristown, where he had resided for some years in a condition of epileptic dementia. The patient was rather poorly nourished, and for the last five years has averaged about ten convulsions each month. The only family history obtainable was that some of his maternal ancestors were epileptic.

Ocular signs were as follows:

Vision—R. E., 5-10; L. E., 5-7½. Accommodated up to 18 cm. in both eyes. The ophthalmoscope showed in the right eye a round disk rather gray in its deeper layers, shallowy excavated throughout its extent and bounded all round by a somewhat sharp scleral ring. There was an absorbing conus to the temporal side, the arteries were narrower than normal and the veins broader. In the left eye the nervehead was oval, 6 × 7 diam., with its long axis at 75, and of the same hue as the right nervehead. The scleral ring was visible only to the inner and outer sides, and there was a small pigment deposit to the temporal side of the disk. The pupils were as follows:

R. E. pupil 3 mm.; did not respond to direct or consensual light stimulus or to convergence stimulus. L. E. pupil 3½ mm.; did not react directly or consensually to light, but reacted 1 mm. to convergence stimulus. Hence, absolute iris paralysis on the right side, and reflex iris paralysis (Argyll-Robertson pupil) on the left side. A point of no little importance in this case was that the pupils were of the same diameter in the dark room as when exposed to diffuse daylight, indicating, perhaps, some implication of the sympathetic fibers to the iris. Unfortunately the cutaneous tests were not made.

In a rather hurried search through the literature Dr. Reber had found the report of 53 instances of this anomaly, and he believed that with more time at his command he could have brought more cases to light.

He said that to attempt an explanation of unilateral Argyll-Robertson pupil was to open the whole question of the path of the pupillary reflex, which has a literature as vast as it is vague. Among the latest contributions to our knowledge of this reflex is that of Bernheimer[2]. His work was conducted on anthropoid apes and on human embryos, and combines the methods of Marchi and Golgi. He states that the pupillary fibers undergo a partial decussation in the chiasm along with the visual fibers, so that each sphincter nucleus is in relation with the visual and pupillary fibers of both eyes: that, in addition to this double connection, there must also exist a central connection between the two nuclei, not yet well established, but in all probability effected by contact of the long ganglion cell processes which, in Golgi preparations, can be seen arborizing across the median line.

Even if this hypothesis of Bernheimer be correct, it brings us very little nearer to the solution of this question of unilateral Argyll-Robertson pupil. Granting that the pupillary fibers of the optic nerve do decussate along with, and in exactly the same manner as, the visual fibers, and granting farther that there does exist central connection between the two sphincter nuclei, we are driven, nevertheless, to the conclusion that the oculomotor nucleus or the motor tract must be the affected region. The only region in the motor tract in which a lesion producing one-sided Argyll-Robertson pupil could occur without causing coincident palsy of some of the extraocular muscles of the same eye is the ciliary ganglion, and thus far the hypotheses having reference to this ganglion do not explain the Argyll-Robertson phenomenon nearly as well as does the nuclear hypothesis. It would seem that in the present state of our knowledge, the most we can say in explanation of either the unilateral or bilateral Argyll-Robertson pupil is that it is the peripheral manifestation of a disturbance in the most anterior portion of the oculomotor nucleus; and that this nuclear disturbance is most likely either of the nature of an obliterating endarteritis or a slow sclerosis.

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[2] Graefe's Archiv für Ophthalmologie, Nov., 1898.

Dr. G. E. de Schweinitz said that his personal experience with unilateral reflex iridoplegia was limited to two or three cases, the most marked one being a patient with cerebro-spinal syphilis in the wards of the Philadelphia Hospital, which he had studied in conjunction with Dr. Dercum. With reference to the lesion in cases of this character, he thought that all modern investigations tended to show that it must be situated in the centrifugal portion of the reflex mechanism, and was probably nuclear in origin. He referred to the admirable paper on unilateral loss of the pupillary light reflex by Dr. Leszynsky, published in the *New York Medical Journal*, August 6, 1898, in which there is a complete review of the literature on the subject.

Dr. Francis X. Dercum said that he had seen, in addition to the cases mentioned by Dr. de Schweinitz, another case of unilateral Argyll-Robertson pupil occurring in a paretic. He thought that the condition occurring in paretics was open to the objection that perhaps in a later stage of the disease the other pupil would also become involved: that there is really in such cases bilateral involvement of the pupil with the condition merely pronounced in one eye and slightly or doubtfully present in the other, the difference disappearing as the cases progress.

Dr. W. G. Spiller said he had hoped that the fibers controlling the iritic reflex would have received more attention. He mentioned that V. Bechterew had reported a case in which voluntary control over the movements of the iris existed. This seemed to show that there might be, in some people at least, a cortical center for the iris.

Dr. Spiller referred to an interesting paper published by Massaut. This investigator removed the iris and obtained degeneration of the "pupillary fibers" in the optic nerve, although he did not injure the optic nerve directly, or the oculomotor centers. He removed the iris and injured the motor nerves contained within it, and following that injury he found degeneration of the "pupillary fibers" in the optic nerve; i. e., he obtained degeneration of the sensory part of the reflex arc following injury of the motor part. Dr. Spiller thought that if these observations were confirmed they would be most important. What is.

true of one part of the body may be true of other parts. We may believe that in the reflex arc for the knee-jerk, fibers exist which subserve the transmission of afferent impulses and have no connection with ordinary sensation. If this is true, the knee-jerk might be lost on account of some lesion of the sensory part of the reflex arc, without disturbance of sensation; and, furthermore, from Massaut's findings, we have a right to expect degeneration of the sensory part of the reflex arc from injury of the motor part. Dr. Spiller was not aware that Massaut's results had been confirmed.

Dr. F. Savary Pearce asked of the ophthalmologists present why it was that in many cases where there was Argyll-Robertson pupil the pupils were contracted.

Dr. G. E. de Schweinitz, in reply, said that the Argyll-Robertson phenomenon might be associated either with myosis or with mydriasis. This depends upon the relation of the lesion to the pupil-contracting center or fibers, or to the pupil-dilating center or fibers; for example, the common paralytic myosis, often known as spinal myosis, which occurs in lesions of the cord above the dorsal vertebræ and is noteworthy in tabes dorsalis, is caused by a paralysis of the pupil-dilating fibers, and may later exhibit the Argyll-Robertson phenomenon. Again, there may be irritation mydriasis with Argyll-Robertson phenomenon, appearing because the pupil-dilating fibers in the posterior columns are irritated.

Dr. John K. Mitchell referred to a patient who had been sent to the Orthopedic Hospital by an ophthalmologist, with a diagnosis of tabes, from the fact that Argyll-Robertson pupil was present. Absolutely no other symptoms of tabes could be found, and the man is apparently still in perfect health, three months after the condition of the pupil was first observed.

A CASE OF CEREBELLAR TUMOR.

Dr. William M. Sweet and Dr. William G. Spiller reported a case of cerebellar tumor occurring in a previously healthy, well nourished girl, 12 years of age, whose family history was good. From the history given by the family, she was taken sick at school early in September, 1898, and suffered from a dull pain in the head, associated with vomiting. The pain in the head, which was a prominent symptom throughout the illness, was always frontal, never sharp in character, and not worse at night. Early in October the mental faculties showed impairment, the child taking very little interest in her surroundings; there was beginning loss of co-ordinating power in the lower extremities, and vision began to be impaired. About the middle of December the hearing commenced to fail, and frequent attacks of pain in the ears occurred, especially severe on the right side. At no time was vertigo complained of, nor was twitching of the muscles of the face or corners of the mouth noticed. Both bladder and bowels were normal in their functions.

At the time of the first examination of the child, early in January, there was marked stupor, and it was with great difficulty that she could be aroused. The loss of co-ordinating power of the lower extremities was almost complete, and when trying to walk the tendency was apparently to fall backward. The knee-jerks were entirely abolished, although reinforcement could not be employed.. No spasticity of the limbs was seen. The cranial nerves, except the auditory and the optic, were not involved. Slight involuntary movements of the fingers were detected. Sensation was felt in the hands and fingers. The speech was almost unintelligible, and deglutition was difficult.

The ocular examination showed no deviating tendencies or restrictions of normal movements of the eyeballs; corneal sensibility was unimpaired; the vision was reduced to faint light perception; the pupils were 6 mm. in diameter, round and fixed; the media were clear, but a market papillo-retinitis was present in each eye, the swelling of the nerve head in the right side being 6 diopters and of the left side 5 diopters. In the macular region of each eye the stellate figure often associated with retinal inflammation and edema was present.

A round-cell sarcoma was found in the middle lobe of the cerebellum. It greatly compressed the surrounding tissue and completely filled the fourth ventricle. The aqueduct of Sylvius and the third and lateral ventricles were much dilated. Considerable degeneration of one anterior pyramid was found by the Marchi method, and this was evidently due to pressure, although the tumor was separated from the pyramid by a large amount of normal tissue. The degeneration of the motor tract in cerebellar tumor from pressure at distance was regarded as an interesting finding, and indicated that in cases of cerebellar neoplasm motor symptoms may be present and not result from direct involvement of the pyramidal tract by the growth. The posterior columns, especially the columns of Burdach, and the inferior cerebellar peduncles, contained many degenerated fibers by the Marchi stain. The pressure on the nucleus of the sixth nerve and the knee of the facial nerve on each side must have been considerable, as seen in macroscopical preparations, and yet no disturbance of the function of these nerves was observed during life. The gradual development of the pressure was probably the explanation of the preservation of the function.

Attention was early directed by Dr. James Taylor to the close relation existing between cerebellar tumor and the presence of the stellate figure in the macular region. It is possible, however, to have papillo-retinitis associated with cerebellar disease without the stellate figure being present, and also to have a neoplasm in the frontal lobes, with the stellate degeneration of the macular region existing.

Whatever may be the cause of this stellate figure, clinical observation associates it with retinal inflammation and edema. It is not alone seen in brain tumors and in renal disease, but has been found in anemia, in thrombosis of the central retinal artery, in typhoid fever, and similar affections, with which papillo-retinitis is sometimes an associated condition. Marcus Gunn believes that the condition is due to the retinal effusion being arrested at the fovea by the close attachment of the structures at this point, this pegging down of the swelling tissue causing a folding of the retina radiating from the fovea. These fine radiating folds favor degenerative processes and tend to assist in the collection and coagulation of inflammatory exudate.

Dr. G. E. de Schweinitz said he had seen the star-shaped figure in the macula in cases of cerebellar tumor, in one case of tumor situated in the motor region of the brain which it was impossible to remove by a trephining operation, and in other cases of optic neuritis which were unassociated with intracranial lesions. The two most noteworthy of these were unilateral, one in a girl between twenty and thirty, which had arisen without evident cause, and which, in the course of a couple of years, entirely disappeared, and the other in a medical man following an attack of typhoid fever. Dr. de Schweinitz thought that Mr. Gunn's explanation of these cases, already defined by Dr. Sweet, was satisfactory, but he was quite sure that it would be a mistake to suppose, as at one time had been suggested, that the star-shaped figure in connection with choked disk was diagnostic of cerebellar tumor.

Dr. Spiller agreed with the statement made by Dr. de Schweinitz, and referred to a case shown him by Dr. Thomson, a little over two years ago, at the Orthopedic Hospital. Areas resembling those of albuminuric retinitis were seen about the disk, and were such as are regarded as characteristic of cerebellar tumor. Dr. Burr found a tumor of the frontal lobe and none in the cerebellum in the postmortem examination of this patient.

REVERSAL OF THE PERCEPTION LIMITS.

Dr. M. W. Zimmerman, by invitation, presented the visual fields and clinical histories of thirteen cases which exhibited the phenomenon of partial reversal of the perception limits. Six of these cases were undoubtedly hysterical; five, in addition to grave organic lesions of toxic origin, justified the suspicion of mild hysteria as a secondary result, and two were instances of acute local ocular lesions with no hysterical symptoms whatever. He valued the visual field changes in the diagnosis of hysteria as follows:

1. Moderate contraction of the visual field *alone* is not conclusive.
2. Extreme contraction in which the field for white or form suffers relatively more than the color fields, suggests very strongly the presence of hysteria.
3. Complete reversal, and persistent reversal, when of considerable extent and not explained by organic lesions, are almost certain evidences of the hysteric state.

Dr. G. E. de Schweinitz agreed with the essayist that the perimeter conscientiously and carefully used yielded accurate results. The relation of the color lines to each other in perimetric examination was interesting, and reversal might be expected as a natural phenomenon when the eyes are examined in a slightly darkened room, to the light of which the retina has not yet become adapted; in cases of hysteria and allied conditions; in certain ocular diseases, especially when these are associated with marked depreciation of general nutrition, notably xerophthalmos, as has been particularly pointed out by Mr. Stephenson; in toxemias, for example, nitrobenzol poisoning, chronic lead poisoning, etc., and in certain organic ocular diseases—optic nerve atrophy, retinitis, etc. In conjunction with Dr. John K. Mitchell, Dr. de Schweinitz had studied many cases of hysteria with reference to the visual field, the first paper having been published ten years ago. They had failed to find the marked achromatopsia described by the French observers in hysteric cases, although they had often noticed reversal in the normal sequence of the colors, so that red was usually the largest field. This was generally present when there was anesthesia, but disturbance of the color-sense and anesthesia did not necessarily belong to each other, because they had examined at least two cases of universal anesthesia without finding alterations in the visual field, and a third case in which, although there was marked contraction, reversal was not present. They had several times noted complete reversal in the color lines, one of the most remarkable being a patient with hemiplegia which had been studied in several hospitals and had sometimes been regarded as an organic hemiplegia, and at other times as an hysterical paralysis with anesthesia.

Dr. William G. Spiller asked whether any of the ophthalmologists present had met with cases of hysterical hemianopsia. He had seen such a case in Dejerine's clinic, and believed that this was the first on record. He had also seen a second case presented by Janet at one of Raymond's lectures.

Dr. G. E. de Schweinitz said that the condition was exceedingly rare. One case had been reported by Dr. John K. Mitchell and himself. Dr. Lloyd, he thought, had reported another.

He had once taken the fields of vision of a hysterical woman while she was in a semi-hypnotic condition, but had not found an anomalous arrangement of the color lines.

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87. HYPERTROPHIE UNILATÉRALE DU SEIN DANS L'HEMIATHETOSE INFANTILE (Unilateral Hypertrophy of the Breast in Infantile Hemiathetosis). Lannois (Lyon Medical, 88, 1898, p. 510).

When infantile cerebral paralysis influences the nutrition of the breast it is ordinarily to cause atrophy (aplasia?) but hypertrophy is not unknown, and the author reports two examples. The first was in the person of a young woman, aged 19 years. The patient had had a cerebral hemiplegia with marked athetosis on the affected side and severe epileptic seizures since her second year. The left (affected) arm was considerably hypertrophied, and the left breast exceeded the right by five centimeters in circumference, and by 1.8 centimeters in the diameter of the areola.

The second patient was also 19 years old, the subject of infantile cerebral (left) hemiplegia and athetosis, but not epileptic. Like the first, this patient also showed some hypertrophy of the left arm, and the left breast measured 3.5 centimeters more in circumference than did the right.

PATRICK.